Desktop Cooler

Quick set-up guide v1.4

OxfordCryosystems

Registration, Set-up advice & Technical support

To allow Oxford Cryosystems to offer fast and accurate technical support, please register your Desktop Cooler (DTC) with us. You can simply do this by sending the serial numbers of the AD51 dry-air unit, rotary vacuum pump and DTC unit to support@oxcryo.com.

The DTC is designed to be simple to set up and start using. If you are unsure about any aspect of this guide or would like some advice, please contact the Oxford Cryosystems Technical Support Team.

Tel: +44 1993 883488
support@oxcryo.com

Unpacking the DTC

The DTC should arrive in one single box (two boxes if an AD51 dry-air unit has been purchased with the DTC). **Note: Take care when removing the DTC components from the box.** Ensure that you have all of the following:

- **DTC unit**
  Serial cable and shield gas line
- **Power supply unit**
  Mains power cable and power supply cable
- **Rotary vacuum pump**
  Vacuum hose, mist filter, operating fluid, O-ring, cone strainer and quick release clips
- **AD51 dry-air unit (optional)**
  Mains power cable, gas line and tool kit
- **Line drier**

Tools required for Installation

- Small screwdriver for power supply cable
- Funnel for operating fluid fill

Before Starting the Installation

Before running your AD51 dry-air unit with the DTC for the first time, it is advisable to run the AD51 unit overnight to establish the correct moisture gradient within the drying columns.

Make sure any transit material inside the dry-air unit has been removed (refer to packing note). Plug the mains cable in and switch the dry-air unit on. Set the needle valve on the flow meter of the dry-air unit to 25 ℓ/min (for more information, please refer to the AD51 manual provided).

Setting Up The DTC For The First Time

Rotary vacuum pump

Note

Each person involved in the installation, operation or maintenance of the vacuum pump must read and observe the safety parts of the operating instructions in the accompanying manual.

With reference to Figures 1 & 2:

1. Open red cap (**a**) with screwdriver and fill up with operating fluid using a funnel. Check level through sightglass (**b**) and replace red cap.
2. Remove red cap from the vacuum port (**c**) and insert a cone strainer.
3. Using the quick release clips, attach one end of the vacuum hose to the vacuum port (c) on the pump. Fit the O-ring onto the other end of the hose and attach to the vacuum port (**d**) of DTC unit.
4. Remove red cap from the exhaust port (**e**) and insert the second cone strainer (**f**).
5. Attach the mist filter (**g**) to the exhaust port of the vacuum pump.
6. Plug in the vacuum pump mains cable and check the voltage is set correctly; turn the vacuum pump on (**h**).
7. Pump for 1 minute before slowly and fully opening the speedivalve (**i**) on the DTC unit.

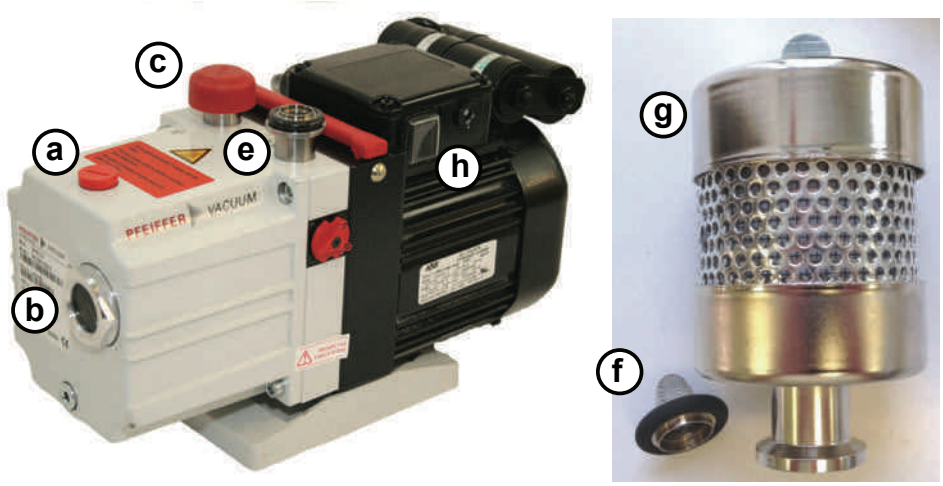

Figure 1 –Vacuum Pump Parts

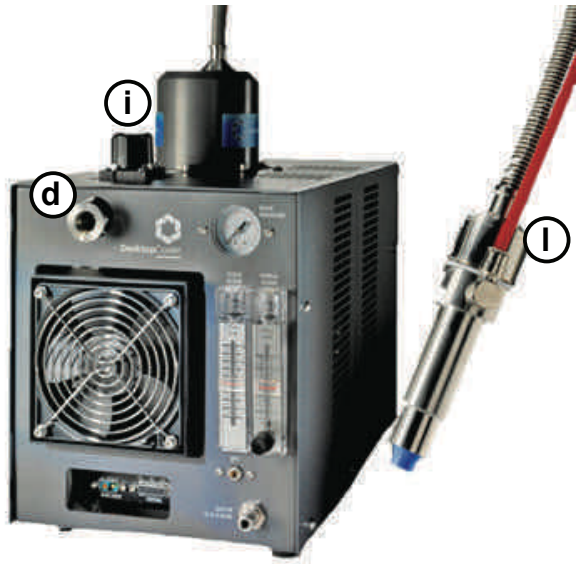

Figure 2 – DTC Parts

Note

- Start the vacuum pump 1 hour prior to running the DTC. This must be done before each run.
- The pump must be left constantly running whilst the DTC is in use.
- We also recommend that you set up the DTC and leave the vacuum pump running for a minimum of five hours (preferably overnight) with the speedivalve open before using the system for the first time.

Power Supply Unit and DTC

With reference to Figures 2 & 3:

1. Connect the power supply cable (blue fitting) from the back of the power supply unit to the front of the DTC, making sure that the black clip is attached (**j**).
2. Plug in the power supply mains cable and switch on the unit.
3. Connect the serial cable (grey) from the DTC unit (**k**) to the computer.
4. Fit the red shield gas line (**l**) between the connectors on the top of the DTC unit and the gas delivery nozzle.

Dry-air unit connection (or alternative gas source connection)

1. Connect the white PTFE gas line from the dry-air unit to the DTC unit “gas in” port (**m**), incorporating a line drier into the gas path if required.
2. To fit a line drier, remove the two blanking caps attached to the line drier (these caps are fitted to the line drier during transit and also for storage to avoid contamination). **Note: Do not leave the line drier open to the atmosphere**. Using the extra short length of PTFE gas hose, fit the line drier into the gas circuit near to the AD51 or to the DTC, whichever is more convenient.
3. Adjust the shroud flow rate on the DTC unit to approx.12 ℓ/min (**n**). The cold flow is pre-set to 5 ℓ/min in the factory.

Figure 3 – DTC Front Panel

Software installation

1. Install the software via the installation CD.
2. Double-click on the CryoPad DTC icon on the desktop to start the software.
3. Go to the Settings tab (see Figure 4) and select the correct COM Port, then click CONNECT. This should change the setting from “Not connected” to “Connected”. If this does not occur, select another COM Port.
4. Under Temp Units, choose K, °C or °F from the Gas Temp drop-down menu.

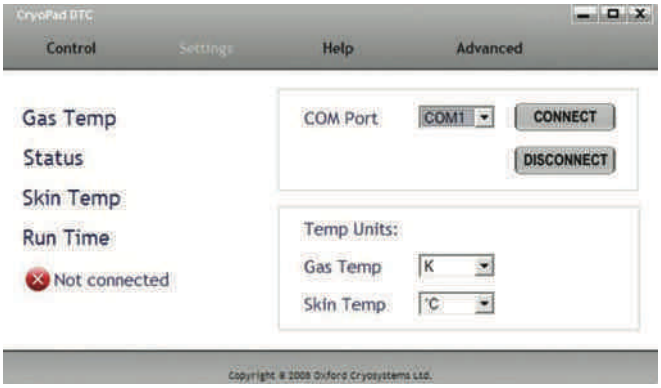

Figure 4 – CryopadDTC Settings Screen (No DTC Connected)

Running the DTC

Note

Each time you run the DTC, ensure that:

- The vacuum pump has been running for 1 hour and continues to run during use.
- The speedivalve is open.
- The dry-air unit or gas source is connected to the DTC and switched on.

1. Double-click the CryoPad DTC icon on the desktop.
2. Select the Control tab (Figure 5).
3. In Set Temp enter the required temperature.
4. Click SET.
5. Click START.

The DTC will start cooling and you will see the Gas Temp will start to fall. 170 K is reached typically in less than 30 minutes. The temperature can be altered at any time by entering a new value in the Set Temp box and clicking SET. For more help with the software, click on the Help tab.

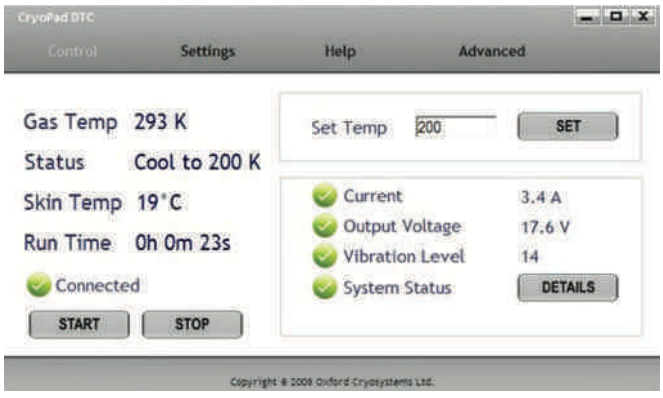

Figure 5 – CryopadDTC Control Screen (DTC Connected)

Note

We strongly advise that the DTC is switched off approximately every 2 weeks for around 6 hours or overnight to allow the system to warm to room temperature. This will avoid blockages forming in the system.

Switching off the DTC

1. On the Control tab of the software, click STOP.
2. Switch off the power supply unit.
3. Close the speedivalve.
4. Switch off the AD51 dry-air unit.
5. Finally, switch off the rotary vacuum pump.

Servicing the DTC

The DTC is designed for ease of use and minimal maintenance, but some parts will eventually require servicing, and we recommend the following intervals in order to keep the DTC in good working order:

DTC Service Interval	Part number
15000 hours	
AD51 service kit	22AD51ServiceKit
24 months	
Vacuum pump service kit	Refer to Pfeiffer Manual
Line drier replacement (if applicable)	22CS-LDUNIT